CLAIMS

1. Method of cleaning a filter during operation of a vehicle comprising an internal
combustion engine (10) which, during operation, sends exhaust to an exhaust system
(140) comprising said filter, and a transmission (10) drivable by said engine,
characterized by the steps
- selecting a gear ratio in the vehicle transmission so that a first temperature within a
first temperature interval is obtained, the first interval being dependent on a degree
of plugging of the filter with regard to a first particle type, and
- then selecting a gear ratio so that a second temperature within a second
temperature interval is obtained, said second temperature interval being dependent
on another degree of plugging of the filter with regard to a second particle type, the
first particle type and the second particle type being different from each other, and
said selection achieving cleaning of the filter.

2. Method according to claim 1, **characterized** in that
- a catalytic converter in the exhaust system (140) is utilized to achieve an increased
degree of conversion of possible NO_x compounds in the exhaust to nitrogen dioxide
and oxygen depending on the temperature change; and
- that oxygen in the filter placed downstream of the catalytic converter in the
exhaust system is used combust particles which have been caught in the filter so that
they are removed from the filter, thereby reducing said degree of plugging.

3. Method according to claim 1 or 2, **characterized** in that
- the amount of particles generated by the internal combustion engine during its
operation is computed depending of parameters which affect the operating
conditions of the internal combustion engine; and that
- the degree of plugging of the filter is estimated depending on the calculated
amount of particles and the filtering characteristic of the filter.

4. Method according to claim 1, 2 or 3, **characterized** in that the degree of plugging in the filter depending on the flow resistance in the filter is estimated.

5. Method according to one of claims 1-4, **characterized** in that the selection (s435) of gear ratio in the vehicle transmission is effective depending on a comparison of said information indicating the degree of plugging of the filter (320) and a pre-determined boundary value information.

6. Method according to one of claims 1-5, **characterized** in that said selected gear ratio is maintained during a time interval depending on the degree of plugging of the vehicle at the beginning of the cleaning process and the desired degree of the plugging at the end of the cleaning process.

7. Motor vehicle comprising an internal combustion engine (10) which, during operation, sends exhaust to an exhaust system (140) comprising a filter (320), and control means (45; 48) and a transmission (90) drivable by the engine, **characterized** in that the control means (45; 48) are arranged to select a gear ratio in the transmission so that a first temperature within a first temperature interval is obtained, said first interval being dependent on a degree of plugging of the filter with regard to a first particle type; and that the control means (45; 48) are arranged to then select a gear ratio in the transmission so that a second temperature within a second temperature interval is obtained, said second temperature being dependent on another degree of plugging of the filter with regard to a second particle type, the first particle type and the second particle type being different from each other, and that selection achieving cleaning of the filter.

8. Motor vehicle according to claim 7, **characterized** in that the control means (45, 48) comprise a control unit (48) for controlling the engine (10) and a control unit (45) for controlling the transmission (90).

9. Motor vehicle according to claim 7 or 8, **characterized** in that a catalytic converter (310) in the exhaust system (140) is arranged to achieve an increased degree of conversion of any NO_x compounds in the exhaust to nitrogen dioxide and oxygen, depending on the temperature change and to utilize oxygen in the filter (320) placed downstream of the catalytic converter (310) in the exhaust system to combust particles caught in the filter so that these are removed from the filter, thereby reducing said degree of plugging.

10. Motor vehicle according to claim 7, 8 or 9, **characterized** in that an estimator (190) is arranged to calculate the amount of particles generated by the internal combustion engine during its operation, depending on parameters affecting on engine operating conditions, and to estimate the degree of plugging of the filter depending on the calculated amount of particles and the filtering characteristic of the filter.

11. Motor vehicle according to one of claims 7-10, **characterized** in that the sensors are arranged to estimate the degree of plugging of the filter depending on a flow resistance in the filter.

12. Motor vehicle according to one of claims 7-11, **characterized** in that the control means (45; 48) are arranged to select a gear ratio in the vehicle transmission depending on a comparison of said information indicating the degree of plugging of the filter (320) and the predetermined boundary value information.

13. Motor vehicle according to one of claims 7-12, **characterized** in that the control means (45; 48) are arranged to select a gear ratio which is maintained during a time interval depending on the degree of plugging of the filter at the beginning of the cleaning process and the desired degree of plugging at the end of the cleaning process.

14. Computer program comprising program code for carrying out the method steps of claim 1, when said computer program is executed in a computer.

5   15. Computer program product comprising program code stored on a medium readable by a computer for carrying out the method steps in claim 1, when said computer program is executed in the computer.

16. Computer program product directly storable in an internal memory in a
10   computer, comprising computer programs for carrying out the method steps according to claim 1, when said computer program product is executed in the computer.